

5th Quarterly Report

PUBLIC REPORT

Date of Report: December 19, 2016

Contract Number: **DTPH56-15-T-00013**

Prepared for: US DOT

Project Title: **Development of an AMR Eddy Current-Based Crack Detection Sensor for Live Inspection of Unpiggable Transmission Natural Gas Pipelines**

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For quarterly period ending: December 31, 2016

Results and Conclusions: Technical work was conducted to finalize the interface between the sensor and robot, lay out the communication protocol between the two entities, define sub-system performance specifications, and develop the control interface. The final mechanical concept for the sensor module was selected, to include deployment mechanisms. A sensor element prototype was developed and tested in controlled laboratory conditions. Firmware was written for the processing module and preliminary data analysis was conducted.

Plans for Future Activity: In the next reporting period, the technical work will focus on advancing the state of the processor development and data analysis. The mechanical concept will be detailed in order to prepare for the manufacturing process. Progressively integrated systems will be tested in the laboratory to verify performance and consistency of results.